

**Multipurpose Power Line RFI Filter for Emission Control and High-Noise Industrial Environments**

# V and W Series



**UL Recognized  
CSA Certified  
VDE Approved**



VV1/VW1  
3A, 6A, 10A

VV6/VW6  
20A

## V and W Series

The V series and W series filters will better protect equipment from malfunctions due to conducted interference coming into the equipment from the line, especially line-to-line noise and transients. They will also provide needed noise suppression to allow most equipment to meet FCC specifications for conducted emissions.

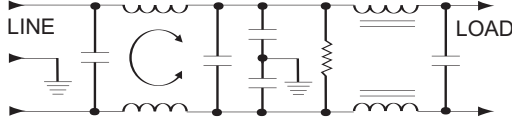
**V Series** – offers an N = 3 (“T”) line-to-ground impedance to common mode and an N = 5 (“Dbl. Pi”) impedance for line-to-line differential mode interference. The filters are designed for susceptibility use when equipment impedance at RF frequencies is low.

**W Series** – provides an N = 4 (“Dbl. L”) line-to-ground impedance for common mode and an N = 5 (“Dbl. Pi”) impedance for line-to-line differential mode interference. The filters are designed for use when equipment impedance at RF frequencies is high. The two-stage construction provides excellent suppression at high frequency.

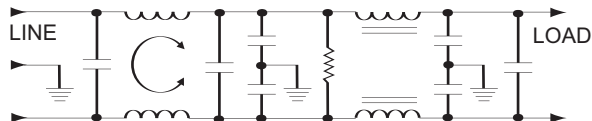
V series and W series filters are also effective to control emissions in equipment using SCR and T<sup>2</sup>L circuits, for compliance with FCC Part 15, Subpart J, and EN55022, Level A, down to 150kHz.

## Electrical Schematics

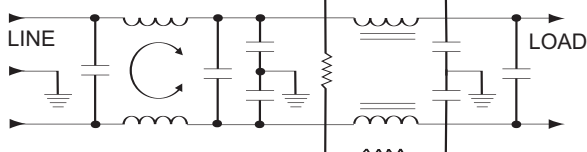
### V Series



### W Series 3A, 6A, 10A



### W Series 20A



Resistor location for reference only.

## Specifications

### Maximum leakage current, each line-to-ground

@ 120 VAC 60 Hz:	0.5 mA
@ 250 VAC 50 Hz:	.82 mA

### Hipot rating (one minute):

line-to-ground	2250 VDC
line-to-line	1450 VDC

### Operating frequency:

50/60 Hz

### Rated voltage (max.):

250 VAC

### Rated current:

3VV/3VW	3A
6VV/6VW	6A
10VV/10VW	10A
20VV/20VW	20A

### Minimum insertion loss in dB:

Line-to-ground in 50 ohm circuit

Current Rating	Frequency—MHz							
	.15	.5	1	2	5	10	20	30
<b>V Series</b>								
3A	15	27	38	47	55	55	50	48
6A	15	27	28	47	55	55	50	48
10A	15	27	38	47	55	55	50	48
20A	15	30	41	49	60	46	36	30
<b>W Series</b>								
3A	13	25	20	45	65	65	65	63
6A	18	30	34	40	65	65	57	47
10A	18	30	34	40	65	65	57	47
20A	18	30	34	40	65	65	57	47

Line-to-line in 50 ohm circuit

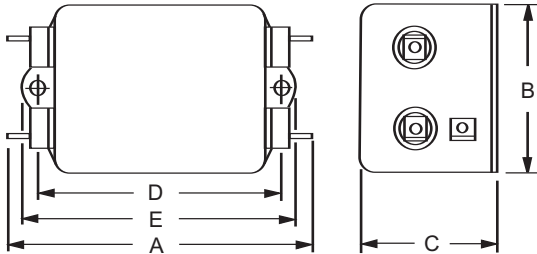
Current Rating	Frequency—MHz							
	.15	.3	.5	1	2	5	10	30
<b>V Series</b>								
3A	25	25	65	65	63	60	52	50
6A	40	54	65	65	65	65	60	57
10A	25	25	65	65	63	60	52	50
20A	25	25	65	65	63	60	52	50
<b>W Series</b>								
3A	25	40	65	65	65	62	55	35
6A	30	54	65	65	65	60	55	38
10A	25	25	65	65	65	65	50	45
20A	25	25	65	65	65	65	50	45

**Multipurpose Power Line RFI Filter for Emission Control  
and High-Noise Industrial Environments (Continued)**

# V and W Series

## Case Styles

3A, 6A, 10A

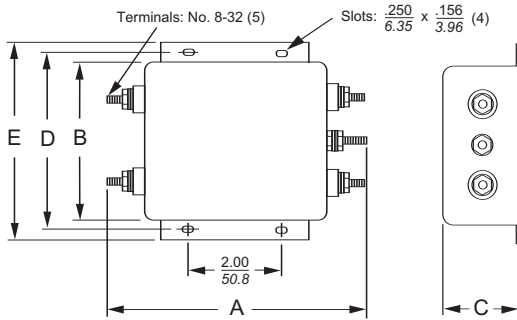


Typical dimensions:

Terminals: .250 [6.35] (5)  
Slot: .07 x .16 [1.8 x 4.1]

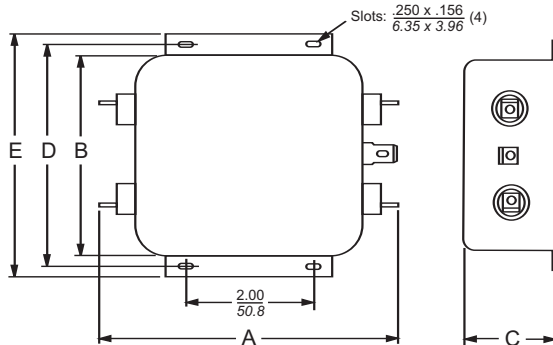
Holes: .07 [1.8] Dia. (4)  
Mounting holes: .188 [4.78] Dia. (2)

## 20VV6/20VW6



Torque: 18± 2 in.lb

## 20VV1/20VW1

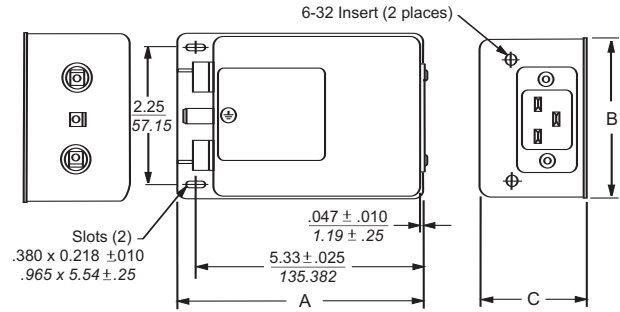


Typical dimensions:

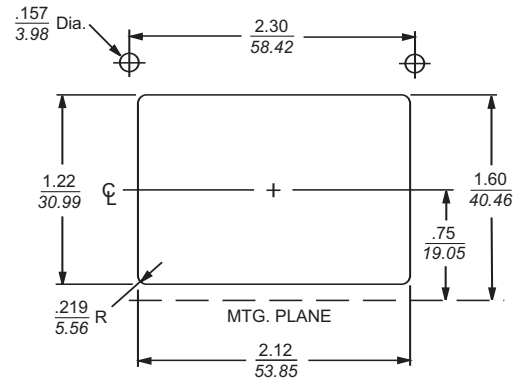
Terminals: .250 [6.35] (5)  
Slot: .07 x .16 [1.8 x 4.1]

Holes: .07 [1.8] Dia. (4)

## 20VW7



## 20VW7 Panel Cutout



## Case Dimensions

Part No.	A (max)	B (max)	C (max)	D $\pm .015$ $\pm .38$	E (max)
3VV1, 3VW1	<b>3.36</b> 85.3	<b>1.82</b> 46.2	<b>1.28</b> 32.5	<b>2.375</b> 60.33	<b>2.78</b> 70.6
6VV1, 6VW1	<b>3.86</b> 98.0	<b>2.08</b> 52.8	<b>1.53</b> 38.9	<b>2.938</b> 74.63	<b>3.34</b> 84.8
10VV1, 10VW1	<b>3.86</b> 98.0	<b>2.08</b> 52.8	<b>1.53</b> 38.9	<b>2.938</b> 74.63	<b>3.34</b> 84.8
20VV1, 20VW1	<b>5.23</b> 132.8	<b>3.38</b> 85.9	<b>1.53</b> 38.9	<b>3.750</b> 95.25	<b>4.20</b> 106.7
20VV6, 20VW6	<b>5.34</b> 135.64	<b>3.38</b> 85.9	<b>1.53</b> 38.9	<b>3.760</b> 95.5	<b>4.20</b> 106.7
20VW7	<b>5.65</b> 143.51	<b>3.12</b> 79.25	<b>2.29</b> 58.17	—	—

## Part Numbers

### V Series

3VV1  
6VV1  
10VV1  
20VV1  
20VV6

### W Series

3VW1  
6VW1  
10VW1  
20VW1  
20VW6  
20VW7\*

\* UL, CSA — 20A; VDE — 16A